The Veterinary Record.

(*Founded by William Hunting, F.R.C.V.S., 1888.*)

No. 13. MARCH 26, 1927. Vol. 7.

Clinical Recording and the Index Rerum.

By F. T. Harvey, F.R.C.V.S., St. Columb.

"A clinical observation, well recorded, always stands the test of time. Nothing ever upsets it or makes it wrong. It never leads us astray. And every one of us, however little opportunity we may have had, may, from the observation of a single case, or, better, a few cases of a given disease, make a record of a hitherto unobserved fact with an important bearing."
James Collier, M.D.

"Unfortunately, it was rare to see articles by general practitioners recording and analysing their clinical experiences or dealing with the commonplaces of everyday practice." J. H. Paton, M.D.

This short article is primarily intended to direct the attention of veterinary students to the great value of keeping notes of cases with which they may meet in practice, and further of offering a few words of encouragement to intending competitors in the clinical prize scheme recently inaugurated by the National Veterinary Medical Association. I have headed the paper with a couple of quotations from recent writings of eminent medical men, since they serve to focus attention on the general question and also to indicate that the veterinary profession is not alone in its endeavours to harness, so to speak, the student and general practitioner to the work of contributing to the advancement of the art and science of medicine and surgery.

Professors and teachers of medicine (and collateral subjects) have vast responsibilities in their various spheres, but they can only lay the foundation stones of the edifice which the student himself must ever be enlarging by his own efforts, and which can only be completed long after the great adventure of obtaining a diploma.

The advancement of veterinary or comparative medicine is dependent to a greater extent on the general practitioner than is the case with the sister profession. With the latter, disease tends to accumulate at certain centres, such as hospitals; with the former, it remains scattered. It is easy to record disease in the mass since there can be division of labour, but it is not easy to do so in a wide country practice. The keeping of notes of cases seen in practice, or of the observations of others, is an art which should be acquired and followed up early in one's professional life, and every student should have his case-book and index rerum for use in vacation, and also after qualification. It is certainly rare, however, to find a student, or young practitioner, with any system of note-taking, or at least I do not appear to have met with one, but probably I have been unfortunate in this respect. I well remember the late Professor Robertson showing me the case-book which he kept when at Kelso and his enthusiasm when discussing the advantages of so doing. Charles Darwin has directed attention to the importance of the note-book. He found it necessary to place his observations and thoughts on paper with as little delay as possible, as he found memory treacherous and unreliable, and this is no doubt true of most of us. The student of medicine who has once accustomed himself to keep notes of his cases is already on the high road to success in practice, and carries an insurance policy, so to speak, guaranteeing his future.

But while the writing up of cases is an art easily acquired by youth, it becomes increasingly difficult with the advance of time, and this difficulty finds expression in the professional press wherein practitioners with long or varied and valuable experience, are too seldom found adding to the common store of knowledge. The thought occurs to one that many students get so "fed up" with continuous note-taking during the College course of lectures that they forthwith register a vow to drop all writing at the earliest possible moment. In fact, it seems all too common a practice in the study of medicine for the student to take copious notes at lectures, and to fail entirely to make notes of his own observations when brought into contact with disease itself.

There is no doubt that the veterinary student of the future will be thrown more on his own resources in acquiring clinical knowledge than has been the case in the past. The Colleges and Schools as centres of clinical instruction are lessening in importance, as a result of changes largely determined by the advent of a motoring age, and the latter has also vastly altered general practice, and even had an influence on the incidence of disease in rural areas. Specialism in its various aspects and forms has come to stay, but the clinical side must always remain the dominant factor with the greatest number, and it is in general practice that the student will find his opportunities for acquiring the necessary knowledge. Here it becomes expedient for him to speed up the process and adopt a system of making notes after the manner of Charles Darwin. I think Sir F. Smith has somewhere observed that one case studied is of more value than half a dozen merely seen. There are certain difficulties to-day in regard to *post-mortems*, since carcases are now carried to knackeries, which are often some distance away, and a student spending a vacation in a country practice will find a motor-bicycle a great asset, for it enables him to visit the knackery and thus see the end of cases which terminate fatally, and to take more time over anything interesting than if he were dependent on the practitioner for his transport. (An interesting paper might be written on the advantages of a motor-bicycle in the

study of clinical medicine). Rushing about the country in a motor car may be very agreeable, but it wants supplementing by a little serious work as above suggested.

In note-taking it is not advisable to confine oneself to rare or unusual cases, for it is the common forms of disease which are of the greater importance, and notes on a series of cases of a common disease will often yield information of the greatest value on a final analysis. Thus, retention of the membranes is common in the cow, and in each individual case there will be something different from the one which preceded, or follows, and yet no one has given complete analytical details, say, of a hundred cases. Many other instances might be given in which there is room for clinical inquiry on the lines indicated, and it is the only way any real advance in the management of common diseases can be obtained.

It is doubtless with a view to the encouragement of students to take every opportunity in adding to their store of general knowledge during their vacations that the National Association decided to offer prizes for clinical notes. I am certain that no more valuable or useful system of prize-giving has ever obtained in the veterinary profession than this, and it is to be hoped that they (the students) will support the movement in ever-increasing numbers.

The Index Rerum.

The student or practitioner keeping a case-book will require some method of rendering his observations readily available, and he will probably also meet with material, either in books or periodical literature, of which he may desire to have a note. Allusion has already been made to the pit-falls of memory, and it is often found that if information is desired concerning something of which we have read or noted earlier, we have no easy method of reference. What appeared at the time so interesting and instructive has become a haze ; the brain is then racked for details which are not forth-coming and the attempt is finally abandoned. Indexes of journals are generally impossible, for the matter may be under a heading suggesting an entirely different subject.

Locke appears to have been one of the earliest to keep a common-place book wherein such matters as he wanted to keep in touch with were duly recorded, but the usual style of diary is, as a rule, a dismal failure and liable to become a burden. The well-known Dr. Todd improved on Locke and introduced what he termed an Index Rerum. The latter consists of an index, running through all or part of the pages of a book, the number of pages given to each letter being proportioned to the frequency of its occurrence in names or subjects. The pages are then portioned out among the initial vowels so that the references to authors and subjects may be inserted in the page corresponding to the initial letter, and first vowel occurring in such name or subject. Thus, a note on a case of mastitis, or a paper dealing with the same, would be found at once under M.a. The index is readily made and specimen entries are appended, the latter being taken from professional journals, etc. In medical and surgical matters it is often of great importance to make cross entries in such a book, one referring to the disease or accident, the other to the organ, or tissue, or complication. Thus gangrenous mastitis would be noted under M.a. and G.a., while a fracture of the tibia would be found under T.i. and F.a. In fact, a methodical man, as Sir H. D. Rolleston points out, could by adopting such a plan (cross references) be prepared to write a more or less interesting article on any subject provided it has an accessible literature.

Probably not many students will attempt the keeping of such a book, but I am certain that those who do so will find the time well spent, and their efforts will afford them much advantage and pleasure in after life.

Thus, as I write I have before me an open page (H.e.) of an index, which contains a note of all the literature published in the *Veterinary Journal*, 1880 to 1884 on hernia, heart, hemlock, etc., and under B.e., Bleeding, we find that Mr. Dyer, of Limerick, abstracted twelve gallons of blood from a horse in three days, in order to relieve an over-distended bladder and that the horse recovered—*Veterinarian*, 1878. F.a. gives a dozen cases of fracture, including one of the styloid process of the occiput.

But every one following Todd's plan will modify and alter it to suit his own particular habits and line of study. If, in addition to noting the title and author, etc., one wants to make a criticism, addition, or quotation, it can be done on the same page or on one further on in the book, the number of the page being given with the first entry. It is also an easy method of making an entry concerning any matter of general interest, so that it may be referred to years after at a moment's notice. Four volumes of Lord Lister's Commonplace Book are preserved behind a glass door at the Royal College of Surgeons. Veterinary students having literary ambitions should consult "Notes on the Composition of Scientific Papers," by Sir Clifford Allbut, a copy of which may be found at Red Lion Square, also "On Writing Theses," Sir H. D. Rolleston, price 1/- ; and "Veterinary Bibliography," F. Bullock, *Veterinary Review*, No. 1, Vol. IV. The "Authors' and Printers' Dictionary," by F. Howard Collins, price 3/6 (Humphrey Milford) will be found useful in many ways.

A	O
Aphorisms.	"Think of common diseases first." "'Queer cases' are usually abnormal types of common conditions." "Remember that many symptoms are part of Nature's defensive mechanisms." "For one mistake made for not knowing, ten mistakes are made for not looking." Always ask the question, "How is the patient reacting to the malady ?"

I. A. Lindsay,
Clinical Memoranda.

A	e
Arsenic.	"Poisoning in Domestic Animals," Professor Clough, *V. Record*, March 5th, 1927. Valuable. The percentages of poison found in tissues and ingesta are given. The importance of chemical analysis is emphasised rather than relying on *post-mortem* appearances, especially when litigation is likely.
Adrenalin.	"Its action on any part is the same as stimulation of the sympathetic nerve at that part. Like the sympathetic, it inhibits the movement of a hollow viscus, while keeping the sphincter controlling the exit closed." LANGDON BROWN, *Physiological Principles in Treatment*, p. 18.
A	**i**
Air.	Fresh. "The finest circulatory tonic we possess, but it must be used with common sense. Avoid icy draughts of cold air." W. H. WYNN, *Treatment of Pneumonia.*
A	**a**
Anthrax.	"Immunity of Algerian Sheep from," Paper on, *Vet. Journal*, No. 54, Dec., 1879.
Ascaris.	***Ascaris Megalocephala.*** "Horse in very poor condition, developed purpura and was destroyed. From stomach onward worms were found in great quantities, almost occluding the bowel. More than two bucketsful were found." *Vet. Journal*, April, 1888. SOMERS.
S	**i**
Signs.	Physical. "An indication of the physical condition of the parts beneath. The fewer found during the examination of a patient the more extensive should be the search for them. For where there is little or no guide to the true nature of the case, light may appear in an unexpected quarter." SIR THOMAS HORDER, *Medical Notes.*
	"A systolic murmur may be functional, a diastolic one, never." *See* Heart.
Strychnine.	Poisoning by, in Dog. *Vet. Journal*, Aug., 1880.
B	**o**
Bronchitis.	Parasitic, in Sheep. "It was worth noting that frequently in a *post-mortem* worms were missed, because the slitting open of the trachea was insufficient for a diagnosis. Carry the incision into the finer tubes and do not make a diagnosis without a thorough examination there." GAIGER. *V. Record*, Jan. 15th, 1927, p. 60.

(Continued at foot of next column.)

Maternal Mortality.*

By W. E. ARMSTRONG, M.R.C.V.S., WIGTON.

When your worthy President asked me to render him assistance in the form of a paper for discussion, he also placed on me the responsibility of the choice of the subject. As the subject I have chosen will be of interest to all general practitioners, I offer no apology for bringing it before you to-day.

I have for some time been interested in diseased conditions associated with reproduction, and although the etiology of some of the diseases of pregnancy is far from being clear, it is gratifying to know that light has been thrown on some conditions following parturition. We are seriously handicapped in our study of these conditions compared with our medical friends who have the patients brought to hospital, with chemical and pathological laboratories adjoining, where the morbid material can be immediately studied. Our teaching centres are, unfortunately, too busily engaged in research on other lines to devote any time to diseased conditions associated with pregnancy. I am convinced that the time has come when the subject of obstetrics and diseases of the genital organs will have to receive more attention at the veterinary schools than formerly.

There will be but few who do not gain knowledge from fatal cases, and it is in the prevention of future mortality that we should view the present fatal case. In reviewing the list of fatal cases at the end of the year we should ask ourselves the question: How many of these deaths could have been prevented by a change in the technique employed? By this method alone I think that the death rate can be reduced. I appreciate fully that we are not placed in very advantageous circumstances at times, and our patients may not render us much assistance, but the number of cases of extreme morbidity which can be brought to a successful issue by proper thought and care and thorough examination of all details before handling is attempted is remarkable.

There can be no doubt that a great number of lives is lost each year from interference and neglect on the part of their owners. That the mortality list is not greater is due to the fact that the cow is endowed with great resistance to some infections.

It need hardly be mentioned that maternal mortality, so far as we are concerned, does not represent the number of deaths in relation to the number of pregnant animals or to parturitions which take place, as the veterinarian is seldom called until the animal is in a morbid state. The maternal mortality is, therefore, in relation to the maternal morbidity.

I have confined my remarks to observations on cattle, as the inclusion of the remainder of the domestic animals would take up too much time. The cases have been dealt with personally, none being included which have been seen in consultation. They are taken from a total of 1,408 cases and the number of deaths is 39.

TOXÆMIA OF PREGNANCY—*Four deaths.*—The first condition to which I wish to draw your attention I have

(Continued from previous column).

T	u
Tuberculosis.	In Horses. SIR JOHN M'FADYEAN. *J. C. P. and T.*, vol. 37, p. 11. Important.—Mode of invasion, nature and distribution of the lesions, etc.
Tuberculous.	Udder, Danger of. *V. Record.* F. CHAMBERS. No. 10, Vol. vii. March 5th, 1927.

* Paper presented to the Annual Meeting of the Yorkshire Division at Leeds on 28th January, 1927.

termed toxæmia of pregnancy, for want of a better term. It may include a number of conditions, but I have encountered it in the form of paralysis and jaundice.

In two cases of paralysis the animals were in the last six weeks of pregnancy and within forty-eight hours after losing the power of standing the animals became comatose and died. The two cases showing jaundice lasted seven days, with fœtid diarrhœa and, during the last twenty-four hours, a strong odour of acetone in the expired air. They died in coma. So far, these cases have occurred in the spring when one has little time or no opportunity for *post-mortem* work. The exact pathology I am unable to state, but in reading some of the latest works on midwifery I conclude that the conditions simulate closely the conditions mentioned under the heading of Toxæmia.

Vaginal Lacerations—*One death.*—The injury in this fatal case extended on the lateral wall of the vagina and into the cervix, but not into the uterus. The presentation had been a lumbo-sacral one, and delivery had been followed by an enormous rush of blood, with clots later. The animal was in shock when seen, but by saline injection subcutaneously, she rallied. The extent of the injury was then determined. The wound was packed with iodoform gauze, but she died from sepsis on the fifth day. I am of the opinion that had the delivery been properly conducted, the injury would not have taken place. It is a common error to hurry extraction of a calf through an imperfectly-dilated cervix and vagina, and I am convinced such procedures end in many serious vaginal and cervical lacerations.

Pulmonary Emboli — *One death.* — This case was delivered of twins ten days previous to death, and so far as I could ascertain she had progressed normally. About fifteen minutes before death she had great difficulty in breathing, and she quickly expired. *Post-mortem* revealed septic thrombi in the lungs from the uterus.

Ruptured Uteri—*Seven deaths.*—Rupture of the uterus during delivery took place in nine cases, seven of which ended in death. In five cases the animal had been in labour for some hours. The fœtus was distended by gas and the animal unable to rise. There is the possibility that in at least four cases the uteri were ruptured before the animals were seen, as they died during delivery. In the other case I was probably the factor in causing the rupture, in my attempts to correct the mal-presentation. In two further cases of obstructed labour the formation of Bandl's ring had taken place, and although chloroform was administered, rupture took place and death followed. I think that Bandl's ring is more frequently present than we think, and that we fail to appreciate its presence.

Undiagnosed—*One death.*—This case is still a mystery. I examined the cow during life. Temperature 103°F., pulse 72; respirations 15; slight anæmia. She died in fourteen hours *post-partum* and a *post-mortem* was held three hours later. I was unable to detect any pathological lesion.

Gas Gangrene—*One death.*—This was a case of obstructed delivery due to a malformed fœtus. The owner's servant had thoroughly explored before I was called. Delivery was easily accomplished, and so far as I could determine there was no vaginal abrasion. On the fifth day the left hind leg began to swell and gas was detected under the skin near the stifle and on the inside of the leg near the udder. She died twelve hours later.

Secondary Hæmorrhage—*One death.*—The case might have been included in the vaginal laceration series, but as death was due to hæmorrhage I have given it a separate heading. The cow was delivered by the owner. The presentation was normal and a considerable gush of blood followed the fœtus. The vaginal wall had been torn for about six inches. She did well for a week, when the bleeding again started, and she expired before assistance could be rendered.

Milk Fever—*Two deaths.*—These two cases are classed as deaths in the milk fever series, as that was the original condition treated. Both cases died from sepsis from prolonged decubitus.

Tetanus—*One death.*—This animal aborted an eight month fœtus, the placenta being retained for twelve hours. On the fourteenth day *post-partum*, unmistakable signs of tetanus appeared. She also showed colicky pains with some distension. Death took place ten days later, when I fully expected recovery. Death was due, I think, to drinking suddenly some water containing sugar, probably causing spasm of the glottis.

Mastitis—*Four deaths.*—Deaths from mastitis are fortunately not common, and although the milking propensities are lessened reproduction is still maintained. I have had three cases of a fulminating gangrenous type and one death from pyæmia.

Acute Uterine Inversion—*Five deaths.*—Five cases of acute uterine inversion paid the supreme penalty. In two cases death was apparently due to shock as the cows died during replacement. Two cases were destroyed on account of rupture of the displaced organ with protrusion of the bowels. The fifth case died from sepsis on the fifth day.

Pelvic Cellulitis and Cervicitis—*Four deaths.*—As these conditions usually occur together, I have taken them as representing one condition. I am of the opinion that they do not receive the attention they deserve. I have had the unpleasantness of witnessing four deaths from the acute form of the disease. My first two cases happened during my early days, when I may have been too anxious to hasten delivery through an already inflamed cervix. Two other cases followed *ante-partum* prolapse of the cervix with ulceration of the mucous membrane. Death took place after parturition, sepsis being the cause.

Pyæmia—*Four deaths.*—In all four cases the original trouble began in the uterus. Septic foci then developed in the udder, and then later in the lungs, the final trouble being septic pneumonia.

Retained Placenta—*Three deaths.*—In the three deaths which took place following removal of the placenta, the *post-mortem* revealed old-standing generalised tuberculosis. In each case the animal was off feed following labour, and the placenta was removed within forty-eight hours of parturition. Death took place within three days.

Obstetric Deliveries—*No deaths.*—Three hundred cases of delivery were effected without incident.

To recapitulate, we have a series of deaths from various causes. How many of these could be avoided? As we do not understand the exact pathology of the cases in the first condition, we will still have a high mortality list to show. Vaginal lacerations can be avoided by more careful handling during the second stage of delivery, by allowing more time for gradual vaginal dilation. On the prevention of emboli I can say nothing. Ruptured uteri call for more careful intra-uterine manipulations during the alteration of mal-presentations, and the prolonged use of chloroform in such conditions as Bandl's ring. Gas gangrene, secondary hæmorrhage, tetanus, pyæmia and pelvic cellulitis and cervicitis can only be prevented by stricter attention to asepsis. More careful supervision during the first few hours succeeding labour would lessen the mortality rate of acute uterine inversion. The question of retained placenta I will leave, but the death rate in my series is as good as one can look for.

I thank you for the patience you have exercised in listening to these disjointed remarks and confessions. It is my object to learn any method for the improvement in handling these types of cases more successfully. If, from the discussion, we are able to save a few more lives yearly, the time will have been well spent.

	Cases.	Deaths.
Toxæmia of pregnancy	4	4
Vaginal lacerations	75	1
Pulmonary emboli	5	1
Ruptured uterus	9	7
Undiagnosed	1	1
Gas gangrene	1	1

	Cases.	Deaths.
Tetanus	1	1
Secondary hæmorrhage	1	1
Acute uterine inversion ...	50	5
Pelvic cellulitis and cervicitis ...	53	4
Mastitis	160	4
Milk fever	104	2
Pyæmia	4	4
Retained placenta	640	3
Obstetric deliveries	300	0
	1,408	39

DISCUSSION.

Mr. J. CLARKSON congratulated Mr. Armstrong upon his very practical paper—it was very good of him to come so far to help them. In his opinion, the percentage of mortality was much increased by interference by owners or their servants before the arrival of the veterinarian, and he instanced a case in point from his own experience, where a man who had been filling "muck" had rendered assistance. The cow had wonderful resisting powers, as compared with most domestic animals, but unless great cleanliness was exercised there was a good deal of risk of infection. That applied perhaps more in ewes than in cattle. With regard to vaginal laceration, that arose, he thought, from too much hurry, not only on the part of the owner, but also on the part of the practitioner. Vaginal cellulitis was dependent on infection, and was a nasty thing with which to deal. In conclusion, he did not think that Mr. Armstrong need be ashamed of his mortality figures in many of the cases he had quoted.

Mr. G. E. BOWMAN remarked that he had a peculiar case the week previously of a thoroughbred mare, insured for £2,000, suffering from dropsy of the uterus. The foal also had abdominal dropsy, and on being cut open some gallons of water were taken away. The foal was got away, and the mare was going on quite favourably.

Mr. F. C. SCOTT said he was rather astounded to hear the small mortality rate which Mr. Armstrong had had in a number of his cases, and he was certain it could not be general amongst veterinary surgeons. For instance, in gangrenous mastitis they lost nearly 100 per cent. There was one form of mastitis in which he would rather have a good deal of work than have a straightfoward case, as in his practice the cases he more often lost were those where there was a straightforward presentation. He had also had mortality from torsion of the uterus. He thought rupture of the uterus often occurred before the veterinary surgeon arrived, and he instanced cases where that had happened. With regard to pelvic cellulitis, it was remarkable that in apparently hopeless cases hardly any treatment was required to put the cow right, whilst in some mild cases death would ensue. He thanked Mr. Armstrong for his excellent paper, and would try to get nearer his percentages.

Mr. A. H. WATSON said that, with regard to the case mentioned by Mr. Armstrong of gas gangrene affecting the leg and going up towards the udder, in a case of his some six months ago there was a development across the loins, over the whole of the ribs, right up to the head, and when the animal was touched it was like a balloon. The cow died in three days. He had no chance of making a *post-mortem*, but he did see there was septicæmia in the udder, though he could not understand why that had caused the development under the skin. In one or two cases of rupture of the udder with which he had met, he was of opinion that the udder had ruptured later on than the time of calving. Perhaps there had been retention of the placenta and later on rupture of the udder. Concluding his remarks, he asked what was "Bandl's ring."

Mr. J. GAUNT said that in Shropshire he had experienced three cases of torsion of the udder. He asked Mr. Armstrong to give them an approximate number of his cases of torsion and his results with them.

Mr. J. W. PROCTOR congratulated Mr. Armstrong on the excellent results he had with his cases. He was not quite sure that locality had not something to do with deaths, in retention of placenta in particular. He thought perhaps in East Lancashire and the West Riding of Yorkshire the cattle were more susceptible to septic conditions following retention of placenta than were the heavier beef cattle. The cases of rupture of the uterus with which he had met had, he thought, occurred prior to parturition.

Mr. W. ACKROYD said he was pleased to hear Mr. Proctor's suggestion with regard to retained placenta taking on a more fearsome aspect in the West Riding than it seemed to have in Cumberland. Speaking generally on the paper, he would like Mr. Armstrong to give some idea in those cases how much was due to infection by interference, and how much was due to pre-parturient conditions. He was wholly with Mr. Clarkson that it was the man with the dirty hands, the expert of the village, who brought on so many fatalities, apart from those due to perhaps over-vigorous manipulation. With regard to gangrenous mammitis, he had found the fatality rate very high indeed. He would like to ask Mr. Armstrong if, in his experience, *post-mortem* hæmorrhage more often followed torsion of the uterus than it did other conditions. He had never seen in veterinary literature any satisfactory explanation of the cases of emphysema with which they sometimes met, as described by Mr. Watson. Sometimes they recovered, but more often they did not. There was a form of emphysema connected with retention of placenta, found under the skin of the loin, which he took to be due to the condition of the blood. He would like to have some information as to how many of the conditions with which they had to deal were due to the pre-parturient condition of the animal, and if Mr. Armstrong could spare the time he hoped he would come again and give them a paper on the subject. He thanked him for his helpful and very provocative paper.

Mr. S. B. VINE said that up to the present he had taken it as an assured fact that if there was a ruptured uterus there would be a death, as he had only known one case recover. The greatest trouble of the veterinary surgeon was the interference that took place before he was called in, which was only done when the farmer was beaten. He was sure that ruptured uterus sometimes took place before he arrived, as he had proved by *post-mortem* examination. He never feared torsion of the uterus very much. So long as there had been no interference before he got there, nineteen cases out of twenty were successful. In emphysema under the skin after calving, odd cases got better but the great majority died. He did not know the real cause, but always put it down to the after discharge being absorbed into the system, causing a sort of blood poisoning.

Mr. A. K. GENTLE enquired what time Mr. Armstrong considered should elapse before removing the placenta. He had been in the habit of allowing four or five days, unless the animal fevered.

Mr. G. WHITEHEAD remarked that he had heard of members of their profession removing the placenta the same day, but he had not been able to do that yet.

Mr. H. POLLARD said that in the cases of mammitis with which he had met, undoubtedly the bags were affected before calving, because in every case they were cows with enormous bags. They calved all right, and at first there was milk, but after three or four days there was nothing to be got but a kind of serum. There was loss of appetite, the bag got bigger, and the cow died. He had stuck a knife up to the hilt in the bag, and the cow had taken no notice of it.

Mr. J. S. WOODROW instanced a case he had a couple of years ago when he was called to a cow. When he arrived he was shewn a normal cleansing, but he was told there was no calf. He made an examination, but could find nothing inside the cow. The calf had never been found. The cow was living and doing well.

The PRESIDENT (Mr. W. A. Campbell) said there had been much said about the interference by the owner, but he had sympathy with owners, because he himself was never quite sure of the exact time to begin operations. Sometimes he blamed himself for being too late and at other times for starting too soon. With regard to straining

in vaginitis, he found a cow cleansed herself better by straining, and he did not think it was wise to prevent it.

Replying to the discussion, Mr. ARMSTRONG said that in dealing with mastitis, Mr. Scott had misunderstood him. He did not mean to give the idea that he had 160 cases of gangrenous mastitis with only four deaths. What he said was that he had four cases, and they all died, but 156 cases that were not gangrenous had recovered.

Infection was undoubtedly the cause of cellulitis. He could not say what brought about the infection, but there might be small abrasions that one could not discover. It was not very fatal.

He performed very few vaginal examinations, and in cases of vaginal laceration he had never examined after his first case, in which the cow died, which taught him to keep his hands out. Probably his later success was due to non-interference. In two recent cases where the cows were practically dying from bleeding, all the treatment he gave was sub-cutaneous injections of about half-a-gallon of saline solution at different points. He left them at that and they recovered.

"Bandl's ring" was a condition described in human midwifery books, where there was a singular contraction of some of the muscles of the uterus, quite close to the cervix.

He must confess that he did not know the proper time to remove a retained placenta. He did remove them twenty-four hours after calving, with much success, but he did not interfere if the cow had gone more than four of five days. He let them come away themselves. If the uterus were douched to keep it clean, there could be very little harm done.

Post-mortem hæmorrhage following acute torsion might be due to rupture of the uterine artery, or the suddenness in getting the uterus back into position might lead to rupture of the cells, but so far as he knew he had never had a case.

The condition described by Mr. Pollard was quite similar to the one mentioned by Mr. Ackroyd. Gangrenous torsion might affect the gland itself and not the skin.

He could not say anything about Mr. Woodrow's missing calf, unless it was like some placentas they heard about, which had sometimes been wheeled away in the muck barrow. A very small calf might have been taken away in that manner without being noticed. Beyond that he could suggest nothing, unless somebody stole it.

He had very little use for tracheotomy except in horses. It was doing something quite unnecessary in cattle—making another hole to heal up, and asking for further trouble.

In reply to a further question, Mr. Armstrong said that in dilating the os he used his fingers only and if he could make no impression in ten minutes he desisted. He knew of no drug for the purpose. The whole secret of prevention of infection was to interfere as little as possible. There was, no doubt, a great deal of pre-parturient infection in cattle. For instance, contagious abortion might be a small matter, but it lowered the animal's system so much as to render it susceptible to other infections.

With regard to the prevention of straining, he thought if the uterus were put back properly there was no straining. In the large number of cases he had had, he had never yet set one up afterwards. He might have applied a truss, to ease the owner's mind, but not to ease his own. If the uterus were thoroughly massaged to get back the muscular tone, tracheotomy was quite unnecessary.

ANTHRAX ORDER.

Mr. Guinness, Minister of Agriculture, informed Sir W. Davison in the House of Commons recently, that he was considering the advisability of including within the scope of the Anthrax Order of 1910 all animals susceptible to anthrax which are kept in public or private zoological collections and travelling menageries. Sir H. Brittain asked how many animals in the Zoo had been affected. Mr. Guinness: Two elephants. (Laughter.) In the second case anthrax was proved; in the first case it was suspected.

The Veterinary Record.

26th March, 1927.

MECHANIZATION OF THE ARMY.

The speech of the Minister of War on the presentation of the Army Estimates leaves very little doubt that mechanization of the Army (to use the new phrase) has come to stay. It will affect the Army Veterinary Service in the consequent reduction in the strength of animals maintained by the Army. Living in a mechanical age, with a desire for more rapid motility and the maximum concentration of gunfire, change is inevitable. To what extent the horse can be supplanted by mechanical contrivance, duly considering terrain to be traversed by contending forces in war, remains to be seen. Some military experts favour the total abolition of cavalry and its replacement by aeroplanes and fast moving tanks and armoured cars; other responsible opinion urges the disadvantages of mechanical mobile units as compared to horsed units in certain military situations, while a late Minister of War has use only for the horse in a zoological museum. To proceed cautiously would appear to be the wisest course, new ideas and systems being proved thoroughly before there is severance with organisations which have stood the test of time. For this reason the effect on war tactics of the entirely mechanized force to be formed at Tidworth for experimental purposes will be followed with great interest, and no doubt this special force will be asked to prove its mettle in due course at our customary army manœuvres.

In the meantime, matters of economy and reorganisation claim reduction and what for the time being may be considered the least essential or the least pressing comes under the axe or the pruning knife. Foremost in the list of reorganisation is the Cavalry arm, in which the various alterations proposed will amount to a reduction of 47 officers, 1,294 other ranks and 1,445 horses, making a saving of £93,000 in 1927, rising in a full year to £237,000. Instead of a headquarter wing which includes a horsed machine gun section and three sabre squadrons, each regiment will consist of a headquarter wing, a machine gun squadron, mechanized with eight guns instead of four, and two sabre squadrons. First line transport will also be mechanized. The change at first will be in respect to six line cavalry regiments but ultimately, and as funds permit, the whole of cavalry will be so reorganised. The difficulty at present is to devise a suitable mechanical vehicle which will meet the requirements of transport of the machine guns and

a first line transport. To mechanize cavalry completely with an unsuitable vehicle would be an expensive mistake. As the Minister of War said: "The horse may not be all that it should be, but, in the meantime, it is better than a vehicle that is all that it should not be." We may leave the matter at that and take consolation in the expression: "We shall see what we shall see."

A complete scheme of mechanization of the army cannot fail to be otherwise than very expensive. The expenditure of £238,000 this year on new mechanical vehicles and £125,000 for research and experiment is nothing compared to the whole layout of mechanization which will be necessary in the artillery arm if that arm is to move and follow over all natures of country intended to be traversed by a mechanized equivalent of cavalry. The composition of the proposed experimental force being formed at Tidworth is most interesting in this respect. It comprises one tank battalion, an armoured car company, a field brigade Royal Artillery, a pack battery Royal Artillery, a field company Royal Engineers, a signal unit and one infantry battalion, re-equipped as a machine gun battalion with 36 machine guns. On the deliberations of this force will depend the further mechanization of the army. But for the present the adaptability of the horse holds the field more or less and until science can produce a better substitute, experts propose to combine horse and mechanization and thus to make cavalry more efficient.

As might be expected when Peter is robbed to pay for Paul, the Territorial Army, "the cheapest defence force in the world," is subjected to the knife. The Territorial Bounty has suffered abolition to provide for necessary ammunition and equipment. Prominence is given to the disbandment of a few Casualty Clearing Stations, three Veterinary Evacuating Stations and two Veterinary Hospitals at a total saving of £8,000, and it may be taken that, so far as mechanization is concerned, the Territorial Army, for some time to come, will have to play the part of the simple onlooker to the war games of the regular army.

There is one matter, however, which, though it is not altogether relative to mechanization, has fairly beaten the War Office, so much so that the Minister of War in his speech is forced to act the rôle of the recruiting sergeant. Service in the Royal Army Medical Corps is not popular. Hence the increase of pay sanctioned under the Royal Warrant in July last, hence also the ante-dating of commissions to include periods spent as house surgeons before taking up commissions, a most anomalous and unique reckoning of rank. Hence, too, the increase of £60,000 in the medical service vote for the year. Now we can realise the full significance of the inducements set forth in the above mentioned Royal Pay Warrant, which already has been the subject of comment in our pages, and of the refusal to treat the Veterinary Service of the army on a similar footing, demand in the latter service being judged to fall short of the probabilities of supply under the proposed schemes for mechanization of the army.

R.C.V.S. Register, 1927.

The 1927 edition of the Register is now published, and is being issued to members with all possible despatch. It has been brought up to date with great care and is not only a list of names and addresses, but a valuable book of reference. Among the new matters introduced we notice that an extract from the Perjury Act, 1911, is given, Sections 6 and 7 of which repeal, so far as England is concerned, Section 11 of the Veterinary Surgeons Act, 1911. The Perjury Act consolidates the law with regard to such matters, *inter alia*, as the forging of Diplomas or Certificates of registration.

The Byelaws of the College which are, as in all developing institutions they must be, subject to amendment and improvement, are here shown as they exist at present, but a footnote shows that Byelaws 60-63 are still under revision. These are the Byelaws governing the curriculum.

The newly instituted regulations for academic dress are given at page 88, and we hope all members will take note of these.

The total number of members on the Register is 3,496, as compared with 3,507 in the Register for 1926—a reduction of 11. The Register of "Existing Practitioners," contains 63 names, as against 69 in the previous Register. The number of registered veterinary surgeons is now therefore 17 less than in 1926, but this does not mean that the profession is declining in numbers, but rather that the admissions are now approaching the normal after the heavy influx of new graduates a few years ago.

The Register contains the regulations for appointments in the R.A.V.C. and the Ministry of Agriculture, and includes useful appendices showing the staffs of the Army Veterinary Department and the Government Veterinary Services. Appendix VII, gives a list of the various Divisions of the N.V.M.A. with the names of the present officials,—a list which should be useful to those readers who are not members of a veterinary association, for it will enable them to communicate with the Secretary of their local Division with a view to becoming members.

A reprint of the Annual Report of the College completes a very useful yearbook.

Notanda.

Copper arsenite (Scheele's Green, Swedish Green, Paris Green) was discovered in 1775 by Karl William Scheele, Swedish chemist. He also discovered chlorine.

. . . . . .

It appears from an old manuscript laid before the French Academy by Stanisas Julien, that a physician named Hoa-tho, who lived in the third century, gave his patients a preparation of hemp, whereby they were rendered insensible during the performance of surgical operations.

. . . . . .

Galen (A.D. 131) taught that the teeth were true bones existing before birth, and to him is credited the belief that the upper canine teeth receive branches from the nerve which supplies the eye, and hence should be called "eye-teeth."

. . . . . .

Ipecacuanha, although in common use in Brazil, was not employed in Europe previous to 1672. In France, within a few years after that date, it formed the chief ingredient in a remedy for dysentery, the secret of the composition of which was purchased by the French Government for 1000 louis d'or, and made public in 1688.

. . . . . .

The first operation of ovariotomy is credited to Dr. E. McDowell, of Kentucky, in 1809.

H. K.

CLINICAL AND CASE REPORTS.

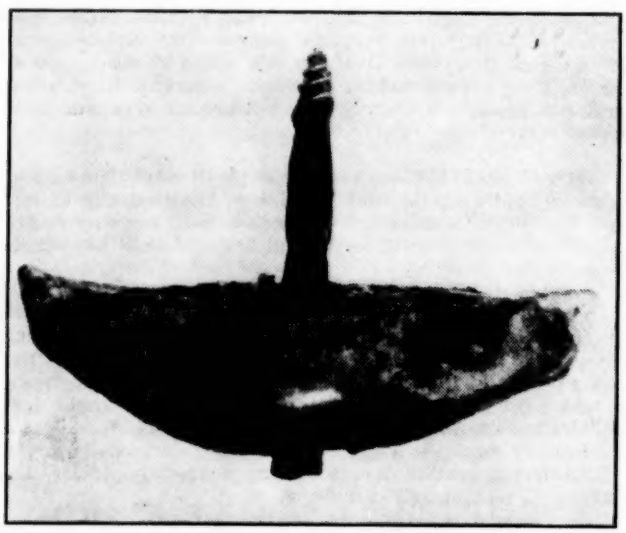
An Unusual Accident.

By Frank Chambers, F.R.C.V.S., Wolverhampton.

On January 27th of this year a boat mare was brought into the infirmary showing acute lameness on the near hind leg. One of my blacksmiths saw the mare first and asked the "steerer" if he had examined the foot to see if she had picked anything up. On receiving an answer in the negative, he raised the mare's foot and saw what appeared to be the metal handle of a corkscrew fixed across the foot between the heels of the shoe. On his attempting to remove this object the mare showed great resentment and kicked the farrier out of the forge. With the aid of the twitch the mare was induced to remain still enough to allow a grip to be obtained on the metal handle. After some little trouble and the exertion of great force, what appeared to be a broken bale hook was removed. From the puncture, which was at the point of the frog, blood poured out. The portion which had penetrated the foot was four inches long and slightly curved.

I got into telephonic communication with the owners and gave a grave prognosis, for, judging by the length of the "hook" and the direction it appeared to have taken, I assumed that the perforans tendon had been penetrated and the navicular joint punctured. There was a big escape of synovia during the night and this practically verified the diagnosis. The mare was in great pain and it was with difficulty that the foot was dressed. She was obviously suffering from ovarian trouble and the "steerer" volunteered the information that she was a confirmed kicker, reducing any stable to matchwood in which she happened to spend the night. Upon making further representations to the owners, permission was granted for her destruction.

On making a *post-mortem* examination of the foot, it was found that the navicular bone was perforated by three inches of a gimlet. The mare had evidently trodden on a metal gimlet and, feeling the pain of the prick, had stamped it in with such force as to drive the point right through the navicular bone. The gimlet was probably broken off when being pulled out by the farrier.



A "No-reaction" Case and its Sequel.

By W. F. Aston, M.R.C.V.S., Shrewsbury.

The following case is of interest under two heads. An aged Red Shorthorn cow, calved on December 5th, was noticed to be ailing and had no appetite. On the 6th she was visited, and symptoms shown were absolute loss of appetite, diarrhœa of a mucoid consistency, straining, no temperature, and severe constitutional disturbance. She apparently recovered under simple treatment by the 12th, and was turned out days for some time, but continued gradually to lose flesh. By December 28th, appetite had again failed, and the diarrhœa increased but was not of such a gelatinous nature. She was slaughtered on January 5th.

She was tested on January 1st, 3rd, and 4th. Skin fold 7, 10, and 11 mm. hard. Eye, 48 hours, nil; 72 hours, slight equal pus in both eyes (left eye tested), so I considered that there was no reaction. There was no suspicion of a skin reaction. The cow had passed several subcutaneous tests, the last being in April, 1924.

Post-mortem revealed the three bronchial lymphatics with caseous nodules, and a portion of lung tissue showed a small T.B. abscess area turning to caseation. There were no acid-fast bacilli in the lung or gland, but guinea-pigs ingested with the suspension were affected with tuberculosis and sections of the gland and lungs from the guinea-pigs showed typical tuberculosis histology.

I do not think the technique of the test was at fault, as I have done a considerable number intradermally, and others done the same day apparently reacted or passed satisfactorily.

The cause of the cow's illness was a growth, weighing from 18 to 20 pounds, situate and adherent to the greater curvature of the rumen on its posterior edge and right side, and below the abomasum, which was not implicated. Six or eight coils of the small intestine were encapsuled in the growth, the whole being a very firm circular mass the size of a football. Histological examination showed that it was composed entirely of fibrous tissue and showed centres of young, active fibroblasts which seem to indicate that the "tumour" was of an inflammatory nature, and not a fibroma.

The reason for such a tissue reponse would seem to be a continued, slow irritation such as a small foreign body, or slight puncture of the bowel, but I was unable to detect any such definite cause.

I am indebted to Professor Buxton for the microscopical and pathological examination and report on this case.

(Continued at foot of first column next page.)

ABSTRACTS.

The Causal Agent of Vesicular Stomatitis proved to be a Filter-Passing Virus.

Previous experiments with large animals had failed to prove that the virus of vesicular stomatitis would pass through bacteria-retaining filters. The recent discovery that the guinea-pig was more susceptible to the virus than horses or cattle, has led to the detection of the virus in filtrates which were formerly thought to be inert.

In the preliminary experiments, filtrates obtained by passing virulent material through Berkefeld candles, types V and N, were inoculated into horses, cattle and guinea-pigs. The disease was not reproduced in the large animals, but the majority of the guinea-pigs gave a reaction. The failure to infect the large animals was thought to be due to the use of an insufficient quantity of filtrate. Further experiments with larger amounts of material showed that it was possible to obtain lesions in horses and mules with infective fluid passed through Berkefeld candles V and N. A horse and a mule inoculated with a Berkefeld W filtrate failed to develop lesions although three out of eighteen guinea-pigs inoculated with the same filtrate gave typical reactions.

It was noted that the majority of the guinea-pigs, which did not give manifest reactions to the filtrates, were resistant to a second inoculation of unfiltered virulent material.

In the horse, the lesions were generally confined to the mucous membrane of the mouth but well-marked vesicular lesions on all four feet with extensive separation of the horny tissues from the deeper structures developed in one horse which received an intravenous inoculation of unfiltered emulsion. Another horse, which was inoculated with a Berkefeld N filtrate, also developed vesicles on the heel of one foot.

[W. E. COTTON. *Jnl. Amer. Vet. Med. Assoc.* Nov. 1926. Vol. 23. No. 2. p. 168.] R. E. G.

(*Continued from previous page.*)

Why build up the Wall-heads?

SUBJECT: An Ayrshire cow, in milk.

HISTORY AND SYMPTOMS: Took her morning feed and seemed all right. At milking time was seen to be trembling and gave less than her usual quantity of milk. She had a diarrhœtic tendency and was holding her head high, and her eyes were fixed and staring. Such was her condition when I arrived at 11 a.m. I took her temperature, pulse, etc., and had her turned out to see if there was any inco-ordination of movement. There was not. She was turned in and tied up, and I sat alone watching her, soon to discover that the trouble was not within but from without.

ADVICE AND TREATMENT: Turn the cow out and set a rat trap on the wall head.

RESULT: I got my half-guinea with a smile and the happy life of the young couple on the wall-head was a short if merry one.

N. A. M. E., Wigtown.

TREATMENT OF PURPURA WITH A PURIFIED FORM OF HEXAMETHYLENETETRAMINE.

Gentet, Aubiers, treated a severe case of purpura hæmorrhagica in a horse with subcutaneous injections composed of 10 grammes of uroformine in 20 grammes of distilled water morning and evening for four days. On the second day the swellings commenced to decrease, until, by the fifth day, they had disappeared. The successful results obtained by James in 1923 (who used intravenous injections of formaldehyde 3 to 4 grammes in 30 grammes of water), those obtained by Nicolas, Eloire and others (on the beneficial effects of formol and urometine) demonstrate the great therapeutical value of formaldehyde and its derivatives in purpura in the horse. [*Réc. Méd. Vét.* Tome. C.iii. No. 3, 15 Fév. 1927, p. 85.]

H. G.

TREATMENT OF SPECIFIC OPHTHALMITIS.

Dr. Eloire, Caudry, states that Houdemer, inspired by the results obtained by Müller and Thamer in human ophthalmology, used milk proteino-therapy on two horses attacked with affections of the eye and, in particular, on a five-year-old horse shewing irido-cyclitis. A series of four intramuscular injections of 10 to 20 cubic cm. of homogeneized and sterilized cow's milk brought about rapid recovery.

In a horse with a second attack of specific ophthalmitis, Eloire obtained recovery with two series of four hypodermic injections of 10 cubic cm. of boiled and filtered milk, each series being separated by an interval of four days. The same success was observed by Carry de Montbéliard on foals affected with the same disease.—[*Réc. Méd. Vét.* 15 *fev. p.* 85-86].

H. G.

The popular idea of the Sloughi being naturally immune to scorpion and viper venoms as well as to the virus of rabies has been exploded by Madame Phisalix and M. Marcenac, who have shewn that he is just as susceptible to them as any other breed of dog or street mongrel. Inoculation of fixed rabid virus into the anterior chamber of the eye, into the brain or under the meninges by the intrarachidial or sub-occipital route is followed in the Sloughi, as in the controls, by the paralytic form of rabies with death after the usual delay of 15 to 16 days. [*Bull. de la Soc. de Path. exotique* 9 *Juin*, 1926. Ex. *Réc. Méd. Vét.* 15 Fev. p. 165].

The claim of the representative of the former Australian Meat Council, Mr. Alick R. Hassan, that Australia is the only beef-producing country where foot-and-mouth disease is unknown, has brought a protest from Canada.

The Canadian Official Press Bureau writes to the *Morning Post* to point out that the Dominion shares the good record of the Commonwealth. "Foot-and-mouth disease," it is stated, "is entirely unknown in Canada to-day, and never has existed there."

DIVISIONAL REPORTS.

North of Ireland Division.

Mr. Arthur Gofton, on "Meat and Milk Control."

(Continued from page 270.)

If Northern Ireland has in contemplation a modification of the existing system of control of the inspection of meat or the creation of a new one, I would urge as strongly as lies in my power that one of the first considerations should be a specification of the qualifications which must be possessed by the responsible officers. And I would also urge that a system of control should be uniformly applicable and uniformly applied. This implies local administration combined with some form of central control and supervision. Under an adoptive system which is dependent on local initiative for its application, experience has demonstrated that in many places nothing is done. The truth of this statement is aptly illustrated by the following quotations from a report submitted in 1920 to the Scottish Board of Health by Dr. Leighton, the Medical Officer of the Board responsible for food administration. He states with regard to the conditions then existing in Scotland in relation to the inspection of meat:—

"There are apparently no less than 136 slaughterhouses divided amongst 34 counties or county districts in which it is admitted that no meat has ever been condemned or, if it has, they (the Local Authorities concerned) have never heard of it.

"No less than 38 boroughs, having 49 slaughterhouses between them, made the reply that no meat had ever been condemned in their abattoirs."

It may, of course, be suggested that everyone of the animals presented for slaughter at these abattoirs was free from disease, but experience clearly shows that such a utopian state of affairs is beyond the realms of possibility. As evidence, I quote the following figures from the records of Edinburgh abattoirs showing the extent to which disease prevails in food animals and renders their carcases or viscera unfit for human food.

Year 1924.	Number slaughtered.	Carcases condemned. Total.	Carcases condemned. Partial.	Heads condemned.	Viscera condemned.
Bullocks	27,859	44	181	759	4,269
Bulls	605	1	14	39	115
Heifers	361	7	10	30	116
Cows	2,936	163	243	449	3,678
Calves	4,741	9	6	5	60
Sheep	117,406	180	71	196	1,810
Swine	17,447	68	102	856	884
	171,355	472	627	2,334	10,932

It would be easy to quote specific instances within my own experience of the need for supervision of all meat passing through slaughterhouses, but one, a very recent case, will suffice. It concerns the carcase of a heifer, slaughtered and dressed in an abattoir owned and controlled by a Local Authority, which, on arrival in Edinburgh, was seized and condemned on account of widespread and obvious tuberculosis affecting the serous membranes. No condemnations simply means no inspection, and no inspection means a risk, which cannot be ignored, that diseased and unsound meat finds its way on to the market and is consumed by the public.

The object of central control should be to ensure appointment of competent officers and the general application of a uniform system of examination and inspection. The procedure to be followed in the latter should be laid down by regulation. An organisation so controlled will envisage more than local requirements. It will be conceived on broader lines to embrace national as well as local needs, and will give consideration to the interests of trade as well as of public health.

It should be one of the aims of meat control to secure, as far as practicable, uniformity in the standard according to which meat shall be judged in the course of inspection. It is frankly admitted that absolute uniformity of judgment is an unattainable ideal, but that does not detract from the desirability of laying down general rules for guidance. This has been done in many continental countries, in America, and also in Scotland. Such general rules do not lessen the need for individual judgment nor do they abolish personal discretion and responsibility, but they do diminish the risk of widely different action in fundamentally similar conditions.

The centralisation of slaughtering in publicly-owned slaughterhouses constitutes an important feature of an organisation concerned with the inspection of meat, and it is vital in relation to meat intended for export. To carry out inspection in a large number of small slaughterhouses is expensive and prodigal of time and labour. It limits the possibilities of detailed supervision and consequently reduces efficiency. Moreover, from an hygienic point of view the publicly-owned abattoir has much to commend it in comparison with the average privately-owned establishment, particularly in regard to ancillary trades, such as gut and tripe cleaning. In addition, centralisation permits of the profitable treatment of many slaughterhouse residues which cannot be handled economically in a small establishment, where they are often difficult to dispose of and very frequently lead to a state of affairs bordering on nuisance. Modern transport developments have nullified the main argument against centralisation.

The need for supervision of the hygienic conditions of the shop or factory is not less important than similar control in the slaughterhouse. Meat and meat food products ought to be stored and prepared under the best of hygienic conditions. It is acknowledged that many tradesmen and manufacturers exercise the most scrupulous care in this respect, but there is always a percentage who are either ignorant of hygienic fundamentals or give no thought to the maintenance of a decent hygienic standard. It is precisely under these latter conditions that meat primarily sound may become contaminated, to the serious prejudice of the consumer. Compulsory registration of persons and of the premises used for the preparation of meat food products has often been discussed as one of the means of assisting in the enforcement of appropriate hygienic conditions both in respect of the premises and of the processes of manufacture. It would certainly

contribute to the elimination of the unsuitable and refractory.

As with meat, so with milk. Properly organised milk control is concerned with all phases of production, manufacture and distribution. The essential preliminary of course requires that milk shall be the produce of healthy cows. It is equally necessary that it should be collected in a clean, wholesome condition. The latter is a matter of personality and method much more than of buildings and equipment. Much stress has been laid on this fact in the course of the campaign for the production of clean milk, and its truth is undeniable. But in advancing the argument, the influence of housing conditions on the health and well-being of the animals producing the milk must not be given anything less than its proper place in the scheme of things. Light and air are cheap and easily provided and both are vital to the maintenance of a good standard of health.

A difficulty which is inherent to the subject of milk control arises from the fact that it is produced in the country districts and consumed in the towns. As a result the tendency in the country districts is to view the cost of supervision as one from which the centres of population reap the benefit. At all events it cannot be denied that, notwithstanding the powers conferred on them by general legislation, many rural authorities are completely inactive in regard to milk control, or take action so restricted in character as to deprive it of any approach to effficiency. For the towns to attempt to follow the whole of their supplies to the places of production and to control them there is not practicable. The difficulties which would arise are obvious, but whether this question could be solved by asking the towns to contribute indirectly through general taxation towards the cost in rural areas is a matter on which widely differing opinions will no doubt be held. It should, however, be stated that the rural areas have a direct interest in milk control as well as the towns. They depend on the towns to provide the outlet for their produce and that outlet becomes more secure and proportionately more profitable if the produce carries a guarantee as to the conditions under which it has been produced and prepared. In England and Scotland the influence of the Milk (Special Designations) Order may be quoted in support of this statement. These Orders permit the sale of milk under special designations such as Certified, Grade A (Tuberculin-tested) etc. These descriptions may only be used by those to whom licences conveying the necessary authority have been granted. The licence is equivalent to an official guarantee of the conditions of production, of the hygienic standard of the milk, and of the health of the dairy stock. Such milk commands a higher price than non-graded milk, and the town consumer is found willing to pay the higher price as a *quid pro quo* for the official guarantee which it carries. Advantage thus accrues to both producer and consumer.

Tuberculosis may fairly be described as the curse of dairy herds. Milk control on the farm should secure for the farmer the help, advice and assistance which will enable him to reduce the incidence of that disease and aid in directing his efforts along lines which will lead to its elimination. From this course both producer and consumer reap benefit. To the farmer, the value of his stock as an asset is enhanced. It is less subject to those minor ailments which reduce milk secretion or retard the process of feeding, and therefore more profitable to manage and to maintain. From the consumers' point of view it may be said that in England and Scotland at least 9% of milk as placed on the market is infected with bovine tuberculosis and capable of communicating that disease to the consumer. A form of control which will contribute to the reduction and elimination of that source of disease has a value, especially for the infant population, which cannot be over estimated. In order to make progress this problem must be tackled on the farm. Without detracting in any way from the value of the work, the experience of Manchester may be quoted to show that control at the place of distribution is futile as a means of reducing the amount of tuberculous milk consigned to the towns. For 25 years Manchester has consistently subjected country milk, sampled on delivery, to the biological test for tuberculosis and at the end of the period the conditions are no better than at the beginning.

Special emphasis has been laid on the tuberculosis problem, but milk control on the farm must also have consideration for the influence of the general health of the individual cow on the milk which she secretes as well as the effect of local diseases affecting the mammary gland. Many mild cases of mastitis are met with in the course of inspection, undetected and unsuspected by the milker, which nevertheless contribute heavy streptococcal infection to the milk without giving rise to obvious change in its appearance when drawn from the udder.

Not the least important function of milk control on the farm is concerned with supervision of the methods of collection and subsequent manipulation of milk. A bacteriological laboratory is an essential corollary to this branch of work. It permits tests to be made of the efficiency of work on the farm and provides concrete and definite evidence with which to influence the producer to effect modification and improvement in his methods. Further, the laboratory frequently plays an important rôle in initiating enquiry on the farm or in the factory by demonstrating the need for it.

Hitherto, administrative action in respect of the hygienic quality of milk has been negligible in comparison with the action taken in respect of its chemical composition. Chemical composition really deals with the question of fraud and there should be no diminution of the effort to protect the consumer against fraud. But hygienic quality is a matter of health, and the consumer should be no less adequately protected in this respect. I cannot emphasise too strongly the fact that the maintenance of milk in a clean hygienic condition from the moment of collection until it is delivered to the consumer demands nothing more than the exercise of ordinary reasonable care on the part of those concerned with its collection, handling and distribution. I do not think that a penalty excluding from the market milk which fails to conform to a reasonable hygienic standard is too severe to impose on those who fail to exercise ordinary reasonable care, provided always that the fault is traced to, and the penalty imposed on, the guilty party, whether producer, middleman or distributor. No more powerful lever could be used to eliminate carelessness or indifference, and none would act

more rapidly in stimulating the effort necessary to qualify for re-access to the market.

Supervision of the housing accommodation of dairy stock and of the buildings and equipment on dairy farms demands not only specialised knowledge but it requires an understanding of animal habits and animal life. The essential requirements of housing are that the buildings should be conducive to the good health of the stock and should permit of the collection and handling of milk so as to ensure a minimum of contamination. In a scheme of milk control judicious care must be exercised to avoid undue demands for capital outlay in respect of buildings. The primary consideration must be the health of the animals. It should never be forgotten that, in the collection of clean milk, buildings have little significance in comparison with methods and personality.

In a sketchy way I have outlined the question of milk control on the farm and I have already occupied too much time to permit me to follow milk from the farm through the various phases of transport, treatment in creameries and milk depôts, to its retail distribution to the consumer. Questions relating to the manufacture of butter and cheese and other milk products must also be considered in relation to a comprehensive form of milk control. Each phase presents its own special problems and, whilst general principles of control might be stated, the introduction of technical processes in manufacture and treatment calls for specialised knowledge and consideration.

Supervision of the manufacture and sale of ice-cream is intimately connected with the question of milk control, but existing milk legislation leaves this question almost untouched. The value of ice-cream as a food is only beginning to receive the recognition which it deserves, but its popularity is increasing and it is desirable to ensure that development of the trade should take place along lines which are best in the interests of public health.

In conclusion, let me say that co-operation and the frequent interchange of information between the executive officers in the producing and in the consuming districts is helpful to both, and is productive of greater efficiency than isolated and independent action. A central administration can do much to foster the spirit of co-operation and to effect co-ordination of the local services in the course of exercising its general supervisory and controlling functions.

Professor J. F. CRAIG, M.A., principal of the Veterinary College of Ireland, Dublin, said that undoubtedly the only absolute safeguard was the removal of tuberculous cows, but if all the tuberculous cows supplying milk for human consumption were detected there would be the even more serious danger of a milk famine. The Tuberculosis Order would do a great deal of good in reducing the amount of tuberculous infection in milk, but it would require to be supplemented by a system of dairy inspection. The only sure way of detecting disease in dairy herds was to have individual animals inspected periodically, and have bulk and individual samples of milk bacteriologically examined. As for meat, it was right that there should be a central authority. Mentioning the necessity for some control of emergency slaughter, Professor Craig said that on a certain farm a bullock fell ill and was killed and issued for local consumption. Later, two horses died on the farm, and an examination revealed that they had died from anthrax.

Mr. M'CONNELL (Armagh) said that in Armagh there was no meat inspection whatever. It was a case of "take what you get, and say nothing." Supervision was badly needed. Travelling through the country, he saw the manner in which slaughter was carried out, and he thought there should be inspection of the animals before slaughter. In regard to milk control, there ought to be a stronger Order than was in force at present.

Several others joined in the discussion, and at the close the lecturer, Professor Craig, and the chairman were thanked, on the motion of Professor Symmers, seconded by Colonel Dawson, O.B.E.

H. G. LAMONT, H. L. M'CONNELL,
Hon. Secretaries.

Yorkshire Division.*

ANNUAL MEETING AT LEEDS.

The Annual Meeting of this Division was held at the Hotel Metropole, Leeds, on Friday, the 28th January, 1927. The President (Mr. W. A. Campbell, of Knaresborough) presided over a good attendance of members, as follows:—Messrs. G. E. Bowman, J. Clarkson, A. Ellison, H. Pollard, E. Child, A. K. Gentle, W. Halstead, F. C. Scott, J. Gaunt, E. H. Pollock, J. S. Woodrow, W. Crawford, G. C. Barber, F. Hallilay, G. B. Vine, A. H. Watson, G. Whitehead, J. W. Proctor, W. Ackroyd, H. M. Holland, A. McCormick (Hon. Treasurer), and T. C. Hall (Hon. Secretary).

Apologies for absence were received from Messrs. J. Abson (Sheffield), D. Hamilton (Harrogate), H. G. Bowes (Leeds), A. W. Noel Pillers (Liverpool), S. E. Sampson (Sheffield), S. Chambers (Huddersfield), F. J. L. Croudace (Northampton) and J. McKinna (Huddersfield).

The minutes of the last meeting were taken as read.

A letter was read from the Lancashire Division with regard to the election of the Council of the R.C.V.S., and it was agreed that the expense of issuing an election circular be shared with the Lancashire Division, and that support be given to their candidate.

The Secretary read an invitation to send a delegate to the Conference of the Royal Sanitary Institute in July next, and reported that the Council recommended that the President should attend, and that £5 be voted towards his expenses. The action of the Council was endorsed.

The Secretary also reported that an invitation had been received to attend a meeting of the Midland Counties Division.

The following new members were elected: W. Halstead (Bradford) and J. F. Rankin (Skipton).

THE PRESIDENT'S ADDRESS.

The address from the Chair followed, in the course of which Mr. CAMPBELL said: It is usual on these occasions to talk politics and to air some of the grievances in the profession as they appear to the individual. I agree with those who advocate a university training. Such training is a great asset to any man entering his career; but are our universities, as at present situated, likely places at which to acquire a sound practical veterinary training? The same question might be asked of our veterinary colleges to-day. Is the centre of a large city the best site to teach young men the care and treatment of our domesticated animals in health and disease? Twenty

* Received on February 13th.

years ago it might have been so, but not to-day, for the centre of our animal population has changed.

We are repeatedly told that the general practitioner constitutes four-fifths of our profession. Are the veterinary colleges catering for the needs of the practitioner? A large percentage of the men getting their dipomas to-day are useless to the country practitioner: many of them are not worth their board, not to mention salary, and it is impossible to find them work that they can do. I know several men who would keep assistants if they could see a chance of making them earn their expenses. Instead, they allow work to go that they cannot get done themselves. Is it an attempt to solve the eternal pupilage question to give the men their diplomas first and allow them to serve their pupilage as best than can? If so, it is hard on the practitioner; he has both to teach the man his profession, and help him and pay him at the same time. To the graduate it is cruel; without practice his theory must be harder to acquire; then he is apt to have forgotten a lot of his theory before he gets a chance of applying it in practice. He is buffeted about, doing a fortnight's "locum" here and a month's work as an assistant there, until he gradually gains a smattering of practical work. The condition is serious from the stock-owner's point of view and it certainly cannot tend to enhance our profession in his estimation.

Recent legislation has driven a number of castrators and unqualified men out of the country, but are we finding efficient substitutes? Are the stock-owners as well served as regards the minor operations? Many of the recent graduates not only have never done those operations but say they have never seen them done, and many of the older men will not do the work. Why, I do not know, as I consider that with our modern methods it is easy work and one of the best paying parts of practice.

A good deal has been said lately of the veterinary surgeon's neglect in poultry diseases, but, to my mind, a far more urgent matter for investigation is the diseases of sheep. Except for the splendid work done by Professor Gaiger and one or two others, nothing has been done. I can give no figures to prove the statement, but my opinion is that the economic loss to Great Britain per annum is greater in sheep than in any other of our animals.

Personally, in no part of my work am I more disgusted with my lack of knowledge than with sheep. Seldom a week passes but I meet cases in sheep which I cannot diagnose and I make dozens of *post-mortem* examinations in a year, and cannot tell the cause of death. I have sought the assistance of laboratories, but never with much success.

I should like to see more unity of opinion in the profession as to what constitutes soundness in horses, and also cruelty to animals, especially the latter. It would be interesting to have a paper by some experienced member on "Cruelty to Animals" and hear it discussed. Somehow veterinary surgeons always appear to shun this subject in their meetings, but it is a very important one, and one against which we all get up at times. Some of the cases reported in the press in the south read very badly against the veterinary surgeons employed in them. Only recently in a prominent place in a daily paper which boasts of the largest circulation, a case was reported where a veterinary surgeon in his evidence said a horse was very lame both fore, very emaciated and totally unfit for work. Another veterinary surgeon, speaking of the same animal, said the horse was sound, in good condition and quite fit for work. Need we wonder why the general public are mystified, and that the gentlemen who have to listen to such evidence make some disparaging remarks about our profession at times? Such cases are more damaging and more degrading to the profession than many that are being brought regularly before the registration committee. Where are the guardians of our morals, that they do not lay hold of one of those cases and sift it to the bottom and expose and punish the culprit or culprits?

Before concluding, I should like to plead for a better attendance at these meetings. I can never understand the mentality of the man who holds himself aloof from all intercourse with his brother professionals. Various reasons are given. I have heard it said they are too tame and flat. My answer to that man is, it is his duty to attend and enter into the discussions and so make them less tame and less flat. The commonest excuse given is want of time. Well, the man who cannot spare, say, two afternoons out of the 365 is working too hard, and no matter how great a glutton he is for work, he cannot stand the pressure long. Apart from the pleasure, I think it is a duty, and I think you are serving your clients better by attending these meetings and gleaning knowledge than by staying away and adding a visit or two more to your day book.

To the young man I would say, join one or more of the divisions of the "National" at once. It is no use saying you can read all that is said and done at meetings in the *Record*. It is not the same; you are missing what is the greatest advantage of all, and that is the opportunity these meetings give you of mixing with your professional brethren. It will broaden your outlook on your profession and prevent those little petty jealouses and misunderstandings that are apt to creep in, even in the best regulated professions. Apathy in this direction leads to staleness, and staleness in a professional man leads to, and is always akin to, ignorance. If the annual membership fee were ten times as much, you would still get good value for your money, or, to use a business term, it is a sound financial proposition. (Applause.)

Mr. CLARKSON (Garforth) moved an extremely hearty vote of thanks to the President for his excellent address, which he regarded as a very fine resumé of their present position.

Mr. POLLARD (Wakefield) seconded, and the motion was carried with applause.

Mr. W. E. ARMSTRONG, of Wigton, Cumberland, then read a paper on "Maternal Mortality." [This paper, and the interesting discussion which followed, appear elsewhere in this issue of the *Record*—ED.].

Mr. ELLISON (Harrogate) moved a hearty vote of thanks to Mr. Armstrong, saying that it was very good of him to come all the way from Cumberland to give them such an able and constructive paper.

Mr. PROCTOR seconded, and the vote of thanks was carried with applause.

Mr. CLARKSON said that, as a point of interest to himself, he would like to know the age of the oldest dog of which any of the members knew. He himself had a fox terrier bitch which he had had for nineteen years, and she was two years old when he got her, so that she would be twenty-one in April. She was almost blind, almost deaf, but in splendid condition, with a perfect set of teeth, and enjoyed life in her own way still. He would like to know if any of them knew of a really well-authenticated case of an older dog.

The PRESIDENT said that a sheep dog belonging to his father was said to be twenty-three years old when it died, but it was kept alive long after it should have been.

No other member knew of a dog older than nineteen years of age.

A vote of thanks to the Chairman concluded the meeting.

T. C. HALL, *Hon. Secretary.*

Interesting "Tuberculosis Order" Case.

A recent issue of the *Peterborough Advertiser* contains the report of a hearing, of which the following is an extract, which is of interest as indicating some of the difficulties with which practitioners are faced in dealing with cases under the Tuberculosis Order.

George Peacock, a cattle dealer of Newark, was summoned for having in his charge a cow whlch was, or appeared to be, suffering from tuberculous emaciation, and failing to give notice to the police without avoidable delay, at Newark on February 4th.

Sidney Adcock, cattle dealer, Melton Mowbray, was summoned for a similar offence, at the same place and time.

Mr. J. Williams prosecuted, and Mr. H. Kelham (Stamford) appeared for the defendants.

The cases were heard separately, that against Peacock being taken first. He pleaded not guilty.

Mr. Williams said that eight or nine days before the date mentioned in the charge, the cow was bought by Peacock and taken to his place in a float. The price paid was £4, although defendant had said it was in good condition. On the morning of February 4th he sold it to Adcock, and it was taken to the station to be loaded up. There it was seen by Capt. Townson and the police, who concluded that it was not even fit to be moved, and ordered it to be slaughtered forthwith. Capt. Townson would say that it was apparent to anyone that the cow was suffering from tuberculous emaciation, but to confirm this a *post-mortem* examination was made. The cow was in such poor condition that when got out of the float it fell and could not rise. The Justices had to determine whether defendant knew of the cow's condition. The defence might be that defendant thought that the animal was suffering from a non-notifiable disease, but if the symptoms were consistent with a notifiable disease the case should have been reported. The prosecution considered the case a serious one, as the beast was consigned to a butcher at Nottingham.

Mr. Kelham objected that this did not affect the present case, and might be prejudicial.

Capt. W. K. Townson, M.R.C.V.S., said that on February 4th at the railway cattle docks he saw a red cow being unloaded from a float. Immediately the tail-board was released the cow fell out backwards. On going to the animal he saw it was in a very poor condition, and practically dying. An attempt was made to get it back in the float, but it could not be got in, and deciding that it would be cruelty to attempt further movement, he ordered its slaughter. In witness' opinion the average person seeing the cow would come to the conclusion that it was suffering from some very wasting disease.

By the Bench: The man-in-the-street would immediately notice the animal's very poor condition.

Capt. Townson went on to say that an average man connected with farming would suspect tuberculosis, which was very common amongst cattle. There was more than one disease which would waste an animal. He ordered the destruction of the animal, and when he made the *post-mortem* examination he found tuberculosis of both lungs and accompanying glands. The intestinal glands showed small tuberculous areas. The disease had been in existence probably for six months. Next day he saw Peacock in the market, and asked him if he had been to see the cow. He replied: "No, I can't do any good. I have made a mistake and must put up with it."

Cross-examined: He ordered the slaughter under the Protection of Animals Act, because it would be cruelty to keep it alive. It was in a dying state, and had been considerably knocked about by the journey in the float, and was not improved by the efforts to reload it. No notice was given to the owner; that was not necessary. He could not be absolutely convinced that the animal was suffering from tuberculous emaciation before the *post-mortem*—a layman was not expected to be convinced, but should have suspected it. Intermittent diarrhœa would waste an animal, but in addition to being a symptom of tuberculosis it was also one of Johne's disease, which was not tuberculous. On account of the similarity of the two diseases it was up to a man to get to know from which the animal was suffering; the tuberculin test would decide that. The *post-mortem* examination was made in case a claim for compensation for the slaughter was made. Without applying tests, no veterinary surgeon could say whether an animal had tuberculosis or Johne's disease. . . . .

Replying to the Bench, Mr. Williams said defendant had reported some previous cases.

Addressing the Bench, Mr. Kelham outlined the evidence he proposed to call. He said that when Peacock bought the animal he was told its history, and that a veterinary surgeon had said it was not tuberculous. An important consideration was the condition of the beast on Peacock's premises and not so much at the station. He submitted that defendant had no reasonable ground for suspecting that the beast had tuberculosis. He submitted that it would have been fairer for defendant or a veterinary surgeon on his behalf to have seen the beast before slaughter.

The Chairman: We are not trying Capt. Townson on the measures he took.

Mr. Kelham said that as the summons was under the Tuberculosis Order the whole procedure should have been. In cases of intended slaughter the Order provided for notice to the defendant and notice of the *post-mortem*, which he or his veterinary could attend.

Mr. Kelham raised the point of Capt. Townson's right to slaughter under the Protection of Animals Act.

The Chairman said that was not at issue that day.

Defendant, on oath, said he bought the animal in question from Mr. Fitzwilliam's Home Farm, Marholm. He had it for about nine days. When he bought it he knew it had a scouring disease. A scouring beast did not cough and would eat well; a "tuber" beast was continually coughing. He never heard the beast cough while he had it, and it ate well, so far as he knew. He bought the beast from Mr. Wagstaff, who told him the beast was scouring and that it had been examined by Mr. Lockwood sometime ago. He would not have bought the beast if he had thought it were "tubered," and did not think it would have been sold to him if it were. He sold it with three others to Adcock, and helped to put it in the float. He then thought it was fit to go anywhere. He had notified other animals which had had tuberculosis.

Mr. George Lockwood, M.R.C.V.S., said he went to the Home Farm, Marholm, early in November, and attended a red heifer which had intermittent diarrhœa, due to Johne's disease. It responded to the treatment he advised. He had no suspicion of tuberculosis, which was very rarely found in the same subject with Johne's disease, and did not apply the tuberculin test. If he had been satisfied that it was tuberculosis, it would either have been reported or sent to the kennels. In mild forms of Johne's disease, which was not notifiable, animals responded to treatment, and could be made fit for the butcher. It was not emaciated when he last saw it, early in December, and was surprised at the improvement it had made. Had it been tuberculous he did not think it would have so improved. It would have been impossible for a layman to have known that it was tuberculous. He would be surprised to know that a certificate of tuberculosis was given if he were satisfied they were dealing with the same beast he saw.

Mr. Kelham submitted there were sufficient connecting links to identify it.

Mr. Lockwood said he only had the one animal under treatment at the time.

Cross-examined: No layman could decide whether an animal had tuberculosis.

By the Chairman: He did not express the opinion that the animal had not tuberculosis; the question never arose with him. There were no obvious symptoms of tuberculosis when he saw the beast.

Wagstaff, recalled, said the animal attended by Mr. Lockwood was the one sold to defendant...

After retirement, the Dean said, that having regard more particularly to the judgment of Mr. Lockwood, they thought it would be hardly right or just to convict, and defendant would be discharged. They made no order as to costs. He was desired to say that the Bench were of opinion that Capt. Townson acted with judgment and quite rightly.

Mr. Williams said he would not proceed to offer evidence in the other case, which was accordingly withdrawn.

Diseases of Animals Bill.

In the House of Commons on 15th March, Mr. Guinness, Minister of Agriculture, moved the second reading of the Diseases of Animals Bill, which has passed through the House of Lords, where its objects were fully explained. The Bill was, Mr. Guinness said, intended to improve and modernise our methods of defence against contagious diseases in animals, and it carried out various recommendations that were made by the Pretyman Committee on foot-and-mouth disease.

Mr. Buxton (Norfolk, N.), said the Bill took powers which were urgently needed. The procedure under the existing law was exceedingly cumbersome and had been responsible for part of the very heavy cost which had fallen on the country during the last five years. He hoped the Bill yielded nothing to compromise on the question of the spheres of the Ministry and of the local authorities, and he wanted the Minister to reassure the Committee that he was taking all the powers that, in his opinion, the Ministry of Agriculture ought to have. They could not afford to have any defect in their procedure, for diseases were vastly expensive for the loss they inflicted, quite apart from the direct cost incurred in dealing with them. (Hear, hear.) The main thing the Government had done in regard to foot-and-mouth disease was, not to adopt the recommendations of the Pretyman Committee for stiffer administration, but to use its administrative powers to put an embargo on foreign pig meat. He thought they were entitled to be told whether, quite apart from the undoubted popularity of the embargo among a large section of farmers, there was clear and definite proof of its success. It had certainly markedly hampered the operations of the bacon factories by the falling off of supplies of cheap pigs.

Captain Everard said farmers would have welcomed a provision for reducing the compensation in the case of animals found with disease on them. He was glad the penalties for neglect to notify were being increased ; perhaps they had not been increased enough.

Mr. Alexander said that those who were engaged in the retail meat trade had experienced very great difficulty since the measures had been taken by the Ministry of Agriculture to place an embargo on imported pig meat. That action had caused an extraordinary rise in price, and had seriously handicapped the bacon factories.

Mr. Lamb supported the Bill and said that any powers which the Minister thought necessary ought to be given to him.

Sir D. Newton said the Bill had the backing of the whole agricultural industry.

Mr. Guinness said that the situation in regard to our resistance to the invasions of foot-and-mouth disease, which had taken place at intervals throughout the heavy infection of the last few years in Europe, was very remarkable. In the first 2½ months of this year, only 21 outbreaks occurred, against 45 in the same period of last year. Those figures did not show the whole improvement, because if they compared the number of initial outbreaks in the same period of this year, they found that there were only three, against fifteen in the same period last year. (Cheers.) That improvement seemed to be due to the embargo. The report published recently by the Foot-and-Mouth Research Committee confirmed the action which the Department took in imposing the embargo because of the outbreak at Carluke. He did not agree with Mr. Alexander that the effect of the embargo on prices had been very serious. It was true that in London, as the metropolitan market was so largely dependent on imported Continental pig-meat, there was a very considerable dislocation in the early weeks, but matters were now adjusting themselves, since alternatve sources of supply had been developed. There had been no corresponding rise in prices in Birmingham or Manchester, where the markets had all through been far more dependent on home-grown sources of supply.

The Bill was then read a second time.

Veterinary Surgeons at "Clean Milk" Demonstration.

As veterinary surgeons, we are all interested in "Clean Milk" production, which has come to the fore so largely during the last few years, and it was with great interest that a large number of members of the profession and students met at Red Lion Square on Thursday afternoon March 17th. and proceeded to Streatham to witness the demonstration on Pasteurising and bottling of milk, so kindly arranged by Major Hobday, as a sequel to the *Veterinary Journal* visit of veterinary surgeons to Denmark last summer.

The party, which was about 60 strong, included, amongst others, Sir John Moore, Sir D'Arcy Power, Colonel Dunlop Young, Professors Wooldridge, Smythe and McCunn, of the Royal Veterinary College, Major Hobday, Mr. Henry Gray and Mr. William Woods and some dozen students from the Royal Veterinary College. Leaving Red Lion Square by charsabanc, they proceeded to the large modern milk depot of Messrs. Curtis Bros. and Dumbrill (United Dairies) at Valley Road, Streatham.

The party was here welcomed by Mr. P. B. Tustin, technical expert to the United Dairies, who briefly outlined the plant we were to inspect. The party then split up into sections of about ten, each of which was personally conducted over the dairy.

The dairy, which is the most modern and the largest in England, was opened by Lord Kenyon on June 29th, 1926. It is built on the side of a grass covered hill and is so constructed that the rear of the premises is higher than the front so that milk churns received from over 200 different farms daily are delivered direct to the second floor, here also the glass-lined tank lorries, each holding 1,200 gallons, deliver their contents. From this floor churns are placed upon a continuous chain lift which raises them to the floor above at the rate of nine per minute. On arrival at the top floor the churns are automatically delivered on to gravity rollers and pass to the four receiving troughs, into which the churns are emptied by hand, the contents being automatically weighed. From this point onwards the milk and churns separate. The churns pass along gravity rollers into the next room, where the new type of churn, ten gallon to sealed lid, is placed upside down with its lid beside it upon a moving platform and passes into the cleaning machine which thoroughly washes and dries them by first three rinsings with hot water at 140°F., followed by three rinsings of hot water at 160°F.and 40 lbs. pressure ; thirdly, they are sterilised by two jets of steam at 220°F. and finally dried by superheated air, rendering them bacteriologically sterile for return to the farmer. There are still a few of the old type taper 17 gallon churns which have not yet been replaced by the new type. These are washed by hand and although steam is used in the process they are not rendered sterile.

The milk meanwhile flows down to the floor below and is received into glass-lined, brine-cooled tanks, wherein it is kept till required.

From these tanks it passes by means of pipes into another room through the 2,000 gallon preheater at 106°F. and into one of the three 1,000 gallon clarifiers, where all extraneous material is removed before passing into one of the 1,000 gallon pasteurisers at 145°F., where it is held for thirty minutes. The temperature and time (the latter is as important a factor as the first) are automatically controlled, thus overcoming any tendency to error on the part of human nature. Cambridge temperature recording clocks show the temperature at all stages during this process, thus providing a ready check upon any part of the day's work.

Milk, on leaving the pasteurisers, flows over the cooler at 38°F., which is situated in a glass-fronted room to which only pure filtered air is admitted.

From here milk flows by gravity to the six filling and capping machines, each capable of dealing with 4,200 bottles per hour. It is interesting to note that the empty sterile bottles from the washers in the adjoining room are kept covered practically along the whole distance of

their course on the moving chain until just about to enter the filling machine so that contamination is avoided After being filled and capped, the bottles are placed by hand into wooden crates holding one dozen each and pass by gravity rollers to the refrigerator which is kept at from 38 to 40°F. A point of interest here is that if milk is kept below this average, in bringing it out again, particularly in the summer time, it rapidly sours.

All waste milk and that returning from the rounds unsold is used for bakery and cheesemaking purposes. In connection with the latter milk must not at present be taken above 145°F. or the albumen is coagulated, rendering it useless for cheese making. One of the representatives of the United Dairies has just returned from Denmark where he has seen a "Flash Heater" in use, which raises the milk for a few seconds to about 250°F. but does *not* coagulate the albumen.

With regard to contamination and tampering with the milk after leaving the dairy, the roundsman cannot possibly tamper with or refill any of the bottles (Milk and Dairies Order, 1926, Section 31) as they have no supplies of milk, no bottle caps, and lastly no clean bottles: yet in spite of these precautions the firm keep a staff of mobile inspectors with four motor cars who are continually taking samples from different roundsmen which are sent back to the depot for examination to ensure the high standard being maintained.

Pasteurising milk does not affect the vitamins and this is to a large extent borne out by the report of the Medical Research Council on Pasteurised Milk (Special Report 105) dealing with diets of boys of school age which says: "It is startling to learn as we now do, for instance, that the addition of one pint of milk (pasteurised) a day to a diet which by itself satisfied the appetite of growing boys fed upon it, could convert an average annual gain of weight of 3.85 lbs. per boy into 6.98 lbs. and an annual increase in height from 1.84 to 2.63 inches, also boys who received the extra ration of milk and did best in weight and height were easily recognisable as obviously more fit than those of the other groups of the experiment who did not receive the milk. There was also during the middle of 1923-24 a complete absence of illness among boys with the milk ration."

All dirty bottles returning to the depôt are placed into two huge machines each capable of washing 140 bottles per minute. The bottles pass through on a modified endless chain and are first washed with a 2% solution of caustic soda at 104°F., followed by a second washing with 4% solution KOH at 155°F., thirdly, washed inside and out with water at 160°F. and at 40 lbs. pressure, then twice rinsed with water at 140°F., followed by two sterilising rinsings in hot water and finally cooled to 60°F. by four flushings with cold water, dried and delivered on to the endless chain supplying the fillers after having been twelve minutes in the machine.

There is a well-equipped laboratory on the premises where both analytical and bacteriological examination of samples taken from the milk and other parts of the plant are examined. In this connection, about twenty samples are taken at intervals from the milk passing through the building, amongst these being one from the raw milk; secondly, as it passes over the preheater; thirdly as it enters the holders; fourthly, as it leaves the holders; fifthly, on the cooler; sixthly, from the troughs, on leaving the cooler, and, lastly, from the filling plant, dilutions being made to $\frac{1}{10}$, $\frac{1}{100}$ and $\frac{1}{1000}$, as well as samples taken by sterile water for various units of the piping after daily cleaning and sterilising before use daily in carrying the milk from one department to the other. All the piping is fitted with quickly detachable joints, each length being numbered to facilitate daily removal and reassembling after sterilising. The result of these latter samples provides a check upon the cleanliness of the piping and upon each man who is responsible for the cleaning of any particular section of the pipe line.

Most of the water used on the premises is obtained from a pump which supplies 4,000 gallons per hour of old Streatham spa water. This water is first used for cooling premises before passing to the boilers where it is heated by waste heat before entering the boilers themselves. The boilers are oil fed by means of spray, and although this method is slightly dearer than the use of coal, it has the great advantage of cleanliness, so essential to a dairy, and eliminates the problem of disposal of waste combustion products. Besides providing the steam used in the milk plant, the boilers supply two alternators of 250 k.w. capacity which make all the electric current used on the premises, and hot water and steam to the laundry also constructed in the building, thus rendering the establishment independent of outside sources, essential in times of strike.

The modern and ideal stables were visited last and these were a source of great interest to all present: they house a stud of some 60 ponies used in milk rounds, these were all in very excellent condition, although they do not receive one single oat a day, being fed chiefly upon chaff, in which after careful search one discovers a little crushed maize with perhaps a trace of beans.

The party had, by a coincidence, the opportunity of witnessing a demonstration by Messrs. Tellus, of 394 Oxford Street, W.1., of a portable electric suction horse cleaner on the lines of the household suction cleaner, but with curry comb, brush and rubber attachments. It is claimed that by use of this machine a horse can be thoroughly cleaned in ten to twelve minutes, removing also all fine dirt and scurf which would not be touched by the ordinary methods of horse cleaning. Sir John Moore said that a similar type of machine was used in the remounts but was not very satisfactory. At King's Cross (L.&N.E.R.) and Camden (L.M.S.) railway stables, electric horse suction cleaners have been in use for some years but have not proved satisfactory.

All delivery vans on returning to the yard are washed inside and out by automatic washers using waste water from the plant.

This concluded the tour of the premises and of this huge pasteurising plant which is 99.5% efficient and which daily deals with 18,000 gallons of milk (total capacity 25,000 gallons), every drop of which is pasteurised in accordance with the Milk (Designations) Order, 1923, under supervision of the Ministry of Health. The average fat content of milk supplied from the plant is 3.65%, *i.e.*, almost one-quarter above Government standard.

The party were then kindly entertained to tea as guests of the United Dairies Company, during which Mr. P. B. Tustin, on behalf of the United Dairies, said amongst other things, that it was with very great pleasure that they were able to entertain such a large and distinguished gathering of professional men, all intimately interested in milk production. Their plant was the latest and most up-to-date one in England and was evolved as the result of years of experience not only at home but in the Colonies and in America, in which latter country milk in 385 cities of the United States must be pasteurised by law. That their premises were so complete, was borne out by the remarks, or rather the absence of remarks, from a gentleman occupying the position of Chairman of the Canadian Public Health Association and also Medical Officer of Health of Toronto who, after inspecting the dairy some few months ago, said that this was the first time he had ever visited a milk plant and was unable to make a suggestion of some structural or other improvement.

Mr. Tustin went on to say that the Directors were not satisfied with only milk pasteurising plant but were going to the two best sources of milk supply, where there were the largest farmers who supplied the cleanest milk in the country. In this connection, he mentioned that on the principle that it is easier to teach the young than the old, their firm were pioneers in the formation of the Young Farmers Clubs which had developed to such a great extent as to be officially recognised by the Board of Agriculture. He especially asked veterinary surgeons that, if they came across any of these clubs, they should do their utmost to help the movement. In a competition held last year

between English and American Young Farmers teams, although the latter were the pick of a large number of clubs from various States, the English team won the contest, which was judged by one Englishman and one American. Amongst the English team was a boy of 17 years and a girl of 16, the latter gaining the highest marks on the points of a good dairy cow.

Mr. Tustin went on to say that the greatest drawback to the English milking cow from the point of view of milk production was the scrub evil and the high manger, illustrating his remarks upon the scrub evil by means of a diagram published by the Extension Service Holstein-Friesian Association of America, 230 E. Ohio Street, Chicago, Ill., showing the results of a large number of years' experiments in breeding animals for good milk production.

He also said that tubercle-free herds should be insisted upon by law as one could never definitely say if an animal was free or not of the disease, instancing a case which occurred a few years ago, whilst he was chairman of the Winnipeg Food Council, when he saw a beast in prime condition with a Government tag in its ear showing it to be tubercle-free Upon its being raised by the hind legs for slaughter a slight discharge ran down the nostrils, and when evi-cerated it revealed generalised tuberculosis in an advanced form with a tuberculous pericarditis four inches thick, which displaced the apex of the heart. He also instanced a case of a certified tubercle-free herd which one day at the quarterly testing revealed 71 per cent. reactors. Those animals had not been infected the day or even the week before.

Pasteurisation was essential and should even be carried out with certified milk as, though the latter was practically free from manural contamination, it was still likely to contain epithelial cells, blood and even, in some cases, pus, all of which are not too good for human consumption.

Major Hobday, Sir John Moore and Prof. G. H. Wooldridge replied, Sir John Moore remarking: "If the veterinary profession were given a free hand they could eradicate tuberculosis in cattle as they have done glanders in horses." A very hearty vote of thanks was accorded to Messrs. Curtis Bros and Dumbrill (United Dairies) for the very interesting and instructive afternoon, with congratulations upon their initiative in laying down such a large and modern plant and upon the results they obtained from it.

. . . . . .

A further demonstration had been arranged by Major Hobday at a slaughterhouse at Streatham, and the party proceeded there, after partaking of the hospitality of the United Dairies Limited. The object of this second visit was to observe a modification of the method of preparing cattle for slaughter as carried out by the Jews.

It has long been thought that the various ways in which these animals are cast might be improved upon and that by so doing one of the chief objections, as raised by humanitarians, eliminated. The principle demonstrated and which is at present being perfected, consists in the use of what may be termed a "revolving stall." The animal is driven into the stall in the usual way, the sides are adjustable and may be moved close up to the animal, and there are other simple appliances whereby the animal can be kept in position. The head and neck protrude through one end. When the animal is in place the stall, which is swung by a mechanical device, is rotated on itself, so that the animal comes to lie with its legs in the air and in the position required by the Rabbi.

Since the head and neck are protruding, it is only necessary to secure the head before administering the necessary cut, and the head movement is limited by a sliding panel shaped to fit the neck and which falls into position. The intention is to work the mechanism by electrical power.

The opinion was generally expressed that the invention was worthy of encouragement and that it mitigated the suffering of the animal.

J. K. S.

NOTES AND NEWS.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

Sept. 12-17th. N.V.M.A. Congress at Torquay.
Mar. 30th—Meeting of the Ayrshire Division, at Ayr.
April 7th—Meeting of the Central Division, at 28 Red Lion Square, W.C.

Dr. Voronoff's Gland Grafting.

Sir H. Brittain (Acton, U.) asked the Minister of Agriculture whether he had had brought so his notice any of the experiments of Dr. Voronoff in grafting an extra gland on to livestock for the purpose of producing a finer and more vigorous type; and, if so, whether those experiments could be looked upon as successful and would receive attention from his Department.

Mr. Guinness, Minister of Agriculture (Bury St. Edmunds): I am aware of Dr. Voronoff's work on gland grafting, and I have arranged, with Dr. Voronoff's concurrence, for a small commission of scientific men to examine and report upon the experimental work on sheep which has been carried out at the Government breeding station in Algeria. Owing to the bad season the visit of the commission has been postponed until October or November, when the grafted sheep will be available for examination.

Development of the Scottish Zoo.

The council of the Zoological Society of Scotland is, says *The Times*, appealing for funds to continue the development of the Scottish Zoological Park in Edinburgh. The society has achieved a measure of success not generally anticipated when it was founded with the object, principally, of establishing and maintaining in the capital of Scotland a national zoological park. It was asserted that the climate of the city was such that few animals could live in it and that such an institution would never support itself in Edinburgh. The park has been open about 14 years, and the public patronage has never permitted any doubt concerning the success of the institution. It has been more than self-supporting and it is stated that one of the most gratifying experiences in connection with the park has been the manner in which so many animals have thriven there.

In the breeding of lions many striking results have been obtained since the first litter was born in February, 1916. Tigers, leopards, brown bears, wolves, jackals, dingoes, foxes, yak, eland, waterbuck, black-buck, camels and llamas, kangaroos and wallabies, and many smaller mammals, including several monkeys, have also been born there. A notable breeding achievement was the hatching and successful rearing of a King penguin in the winter of 1919-20, a success which was repeated in 1924 when two chicks were hatched and reared.

It is now proposed to enlarge the park, and in an appeal issued by the council it is stated that a great opportunity for development is offered by 40 acres of land belonging to the society and extending to the top of Corstorphine Hill, on the north of the ground now in use. To enable the council to lay out and utilise this ground and to provide much-needed improvements in some of the existing enclosures for animals, it is estimated that a sum of £25,000 is required. With such a sum at its disposal, it is added, the council feels confident that it will be able to make the park a national institution, unrivalled for beauty of site and natural amenity, in which Scotsmen at home and abroad may take a legitimate pride.

Improving Horsemanship.

"No one who has followed carefully the shows at which riding classes prevail can fail to have noticed the improvement there has been in the riding," writes a correspondent to *The Times*. "This has been conspicuously marked in the children's classes and there is every reason to think that it is the conditions attached at the National Pony Show which have brought about this improvement.

"But this is not the only improvement which was noticeable at last week's show. In the hunter classes there was a decided change for the better, and in the jumping classes there was less of that wild throwing about of the arms which is so useless and so unsightly. A little more than 100 years ago school riding was treated with something like contempt in England, and was more or less looked upon as mere circus riding. In the young days of the present writer, he heard many criticisms of school riding from old horsemen who spoke with contempt of the horsemanship of the French refugees, who were famous for their heavy hands and for the severe bits with which they tortured their horses. It was this which made school riding get out of favour, and in the 'forties and 'fifties it was spoken of as worse than useless. The French riders substituted art for nature, art so artificial as to be practically a hindrance to the main object. There seems every prospect of school riding coming more to the front as time progresses; but we must take care not to fall into the mistakes of 150 years ago, which did much to retard the world's horsemanship."

Dates of Sheep Dog Trials.

The International Sheep Dog Society announce that the three national trials will take place this summer as follows: English national trial at Lancaster on July 27th; Welsh national trial at Aberystwyth on August 5th; and Scottish national trial at Stranraer on August 10th. The international trial will be held at Stirling, provided that satisfactory arrangements can be made, and failing Stirling on the racecourse at Ayr on August 31st, September 1st and 2nd.

A special class is being included at the English national trial restricted to the Old English breed of sheep dog, a cup and the prize money being given by Miss Tireman, the well-known Sussex breeder. At the Scottish national trial a special class will be provided restricted to dogs from the Isle of Man and Ireland. Twelve dogs will be selected at each of the three national trials to take part in the international trial, no reserves being allowed to the teams.

H.M. Stationery Office Publications.

The undermentioned have been published during the week. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office, at the following addresses:—London: Adastral House, Kingsway, W.C.2, and 28 Abingdon Street, S.W.1; Cardiff: 1 St. Andrew's Crescent; Manchester: York Street; Edinburgh: 120 George Street.

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House of Lords Bills, 1927:—		
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112. Animal. Diseases of Animals. The Importation of Carcases (Prohibition) (Amendment) Order of 1927, dated February 10th, 1927 ...	0 1	0 1½
House of Commons Bills, 1927:—		
8. Wild Birds Protection. To repeal the enactments providing for the Protection of Wild Birds; and to substitute other provisions therefor ...	0 4	0 4½

CORRESPONDENCE.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

"The Tuberculin Test."

To the Editor of The Veterinary Record.

Sir,—The Leader which appears in the current issue of the *Veterinary Record* entitled "The Tuberculin Test" calls, in several respects, for comment. The article is, in at least one instance, contradictory; in another instance it is incorrect and finally it contains a suggestion, underlying some statements, which is exceedingly dangerous and one which will not meet with the unqualified approval of the rank and file of the profession.

Paragraph eight reads as follows: "As was pointed out in the discussion, the great advantage of the subcutaneous test is that a temperature chart can be so much more easily read than the record of an intradermal test which depends so much on the human element, *i.e.*, on the skill of the operator, his experience in interpreting the character of the swelling, and even on the type of instrument and needle he uses. A purchaser can himself read a temperature chart and draw his own conclusions, but he must rely absolutely on the experience and skill of the veterinary surgeon in the case of the intradermal test. For this reason it will never supersede the subcutaneous for many tests, ..."

I imagine this last word is a printer's error and that it should read "years" or whatever period of time was in the mind of the writer of your article.

Firstly, I cannot agree that a temperature chart is read with greater ease than the result of an intradermal test. I can imagine an owner or cowman having some difficulty, but I am not concerned with them but only with the veterinary surgeon. Charts prepared after an intradermal test are read with equal ease and, to my mind, with much greater certainty, for whereas anything may send a cow's temperature soaring up, nothing but an injection of concentrated tuberculin will cause a reacting swelling the size and character of which can be easily and plainly shown on a chart.

It would appear from your Editorial that because the intradermal test depends so much on the human element, on the skill of the veterinary surgeon, on his experience and the needles he uses, this is a very serious drawback to the test. Surely this must be one of its main advantages, for the interpretations must, as is correctly stated, be carried out ENTIRELY by the veterinary surgeon, and it is not possible to leave this work to the owner or his cowman.

Is it seriously suggested that the owner and veterinary surgeon should consult together before the latter decides which animals have reacted and which have passed? My view of tuberculin testing is that it is an operation requiring skill, judgment and experience, which are to be found in our country practitioners and not in owners or their cowmen.

To quote again: "If there are any doubtful reactions (to the subcutaneous test) the intradermal test can be applied immediately—also to any cows whose temperatures are abnormally high at the time of the test."

This admits of drawbacks to the subcutaneous test which the writer of your Editorial agrees are overcome by the double intradermal test.

I quote one final statement: "Pre-inoculation temperatures are of great assistance and these can be taken by the owner, which will be a saving of expense."

Far from being "of great assistance" they are, indeed, essential, but if the owner can take them, I see no reason why he should be precluded from taking the whole lot, for he would then be reducing the cost of testing his cows to a minimum and it would only then be necessary to forward the temperature charts to his veterinary surgeon for the required signature!!!!

I take it, Sir, that one is to assume that expressions of opinion contained in Leading Articles in our official journal have the consent of the Editor or his Committee and, further, that one is to assume that policies advocated in such articles possess the blessing of the powers that be and the Council of the N.V.M.A. in particular. If this is so, I will ask one question in conclusion of my criticism : Is it the policy of the "National" to advocate methods of procedure to veterinary surgeons which call for consultation with their clients as to correct interpretations of results of their work, in preference to those methods which rely entirely on the ability, acumen and professional integrity of the veterinary surgeon ? If this is the case, then we must indeed put our house in order.—Yours faithfully, GEORGE W. DUNKIN.

Assistant Veterinary Research Officer for Muktesar, India.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—With reference to Sir John Moore's letter in your issue of the 19th inst., I beg to state that the grade pay of a Deputy Superintendent or Provincial Officer was fixed by the Government of India at Rs. 250-25-750 some years ago. Officers on this scale of pay are ordinarily graduates of Indian Veterinary Colleges who have earned promotion by selection. Until recently, the rate applied strictly to all officers appointed directly by the several civil administrations to their respective veterinary departments. Appointments to the Imperial Service were made by the Secretary of State on an entirely different rate of pay. Increments are always determined according to certain well-recognised principles when drawing up scales of pay. An annual increment of Rs. 25 *per mensem* on an initial pay of Rs. 550 is a most improbable proposition.

It would appear that for the appointment in question a graduate of an Indian Veterinary College with special training and experience is required and that the advertisement has been inserted in English papers to catch the eye of such an one who happens to be studying in Great Britain. —G. K. WALKER.

21st March, 1927.

White Heifer Disease.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I read to-day with interest the article by Mr. W. F. Aston on White Heifer Disease, and note that in neither of his cases did he remove the accumulation of fluid behind the membrane. In Case No. 1 this was not attempted apparently, and in case No. 2 he found it impossible to break down the "wall." He points out that Williams (*Diseases of Genital Organs*), and Muller and Dollar (*Veterinary Surgery*) suggest that the treatment is simple. I agree with these authorities, although the subjects with very small vaginas cannot invariably be successfully treated with the trocar and canula, as the hand cannot be introduced to break down the membrane. In these cases I use an instrument which pierces and breaks down the membrane without the introduction of the hand. This instrument can also be used for ordinary cases. I shall be pleased to let any practitioner have the use of this on receipt of a wire.

Mr. Aston says that he has great doubts that the enormous scar tissue would be a serious item in delivering at the end of pregnancy. I have examined many after the operation and never remember seeing any appreciable scar tissue, and this is to be expected as the membrane is *obliterated*. White heifer disease is discussed on pages 123, 179 and 199 in the *Record* of 1925.—Yours faithfully, O. STINSON.

Appleby,
March 19th, 1927.

The Benevolent Fund Aid Performance.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I wish to thank you and your committee for the great help you have given me in my effort on behalf of the Victoria Veterinary Benevolent Fund. I must say that the support I have already received is *most* encouraging. I am not at the moment able to announce "house full" for the performance of "The Rotters," but I sincerely hope that will be the case when the curtain rises. There are still some seats left in all parts of the house, numbering at this date (22nd March, 1927) about 80. Two hundred and forty-eight tickets have been sold and I would ask that a special effort be made by members of the profession to fill up these remaining seats. I would also ask those who have collecting cards to concentrate on these, accepting any amount, however small, even 6d. or 3d. at a time, and to return these with the amount collected *before* April 5th ; by their doing so I shall be in a position to announce the approximate amount to be handed to the Fund at the end of the performance.—Yours truly, P. J. SIMPSON, F.R.C.V.S.

5 Bank Parade,
West Kensington, W.14.
March 22nd, 1927.

Colorado College Library Loss : An Appeal.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—The Veterinary Department of the State Agricultural College at Fort Collins, Colorado, U.S.A., has had a serious loss by fire, the departments of Veterinary Medicine, Physiology, Pathology and Parasitology having been burnt to the ground on January 28th last. The Museum and Library are a total loss. The State of Colorado is rich, and the property was, no doubt, well insured so that, as far as money can go, buildings and equipment are sure to be replaced on a better scale than before ; but as an old teacher in the institution I feel very sympathetic with the Dean, Dr. George H. Glover, about the loss of his library.

I propose to offer him what duplicates we can spare from Glasgow College Library, and I now appeal to members of the profession to overhaul their own shelves and see what they can contribute.

Most acceptable will be old books and old editions of books, now probably not obtainable from booksellers, bulletins, leaflets and odd numbers of periodicals.

I will gladly constitute myself, or rather Glasgow Veterinary College, as the channel, and I suggest that members communicate with me before May 1st giving me the following information :—

Books : Full Title ; author ; translator, if any ; edition ; date ; publisher.

Periodicals : Full title ; number ; year ; month ; publisher.

Bulletins and Leaflets : Full title ; date ; origin ; number of pages.

I will then prepare a list and submit it to Dr. Glover, so that he can select what he needs. No doubt he will already have received a great deal of help from American sources. It will probably be early in July before this correspondence can be finished, and about that time those who have been kind enough to contribute may expect to hear from me asking them to forward their parcels to Glasgow.

In the meantime, I ask them not to send books, etc., to me here.—Yours, etc., A. W. WHITEHOUSE.

Glasgow,
March 20th, 1927.

The Editor acknowledges the receipt of the following :—

Annual Report of the Civil Veterinary Department, Bihar and Orissa, for the year 1925-26.

Report of the Annual Meeting of the North of England Division, from Mr. J. R. Rider, Hon. Secretary.

Communications from Mr. R. L. Cornell, Miss Doris Knight (Reading), Mr. A. Levie, Major C. H. S. Townsend and Captain J. F. D. Tutt.

National Veterinary Medical Association of Great Britain and Ireland.

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Miscellaneous.

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